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HOME ECONOMICS IN RURAL SCHOOLS.

INTRODUCTION.

The introduction of home economics in rural schools is not a question of desirability but of possibility and feasibility. It is not disputed that rural girls and women are in as great need as are townswomen of an adequate knowledge of foods, household sanitation, and personal hygiene, or that they need to acquire a mastery of the technique of simple cooking, sewing, and housewifery.

Municipal authorities provide adequate and satisfactory water supplies, arrange for the disposal of household waste, and by the enforcement of various ordinances protect the urban dweller from possible results of his own ignorance or carelessness.

The products of bakeries and delicatessen stores may be substituted by the urban housekeeper for the products of her own skill. An abundantly supplied clothing market may relieve her of the necessity of knowing how to make garments.

The rural home is, in large measure, self-dependent. The occupants of a rural homestead determine their own environment and control the healthfulness of their surroundings.

Upon their intelligent care depends the sanitary condition of their own foods from time of production until consumed.

Physicians and hospitals are not readily accessible; hence, many emergencies, accidents, and sicknesses must receive first aid and care from the rural housewife.

Though the mail-order houses may deliver to the country woman many of the garments worn by the family, yet there is much making, remaking, and mending of clothing to be done in the rural home.

Since home economics is chiefly concerned with the wise and careful use of foods and fabrics, the maintenance of sanitary conditions in the home and community, the establishment of habits of good personal hygiene, the acquisition of efficient skill in the manipulation of household material and the care of the sick, and in the maintenance of such homes as may be satisfactory places for the nurture of children and the rest and refreshment of adults, the desirability of instruction in home economics may be conceded.

Yet the feasibility of injecting new subjects into an already overcrowded rural school program becomes a problem requiring careful consideration, though the subjects themselves are highly desirable.

Before a place on the daily schedule of studies is granted certain conditions must be assured: There must be no decreased degree of efficiency in

the teaching of the basic subject matter in language, arithmetic, history, geography, etc.; and the new material must by coordination stimulate a greater interest in these basic subjects.

If, in addition to meeting these conditions, the added material makes a contribution to the physical well-being of the child, presents problems which he recognizes as vital to his own needs at the time, and affords opportunity in cooperative social activity, then a place may be made for this instruction, even though an extra effort in time division and class adjustment must be made.

The teaching of even a minimum amount of home economics requires some special training in the subject on the part of the instructor, or else an unusual degree of experience in household affairs under the direction of a wise and efficient mother. This experience, when enlarged by consultation of good textbooks, proves adequate preparation for as much home economics teaching as can be done in a small rural school.

Some rural districts have employed an itinerant teacher of home economics who gives instruction in five or more schools. In certain sections of the country, the county agents of the extension service have articulated their work with that of the rural schools and have thus been able to teach some home economics and some agriculture.

The most satisfactory method of introducing home economics into the rural school curriculum has been by the maintenance of a hot supplemental lunch prepared and served by groups of the children.

Before school or during morning recess the teacher and the older girls spend some time in the preparation of the food. The teacher gives directions and oversees the workmanship and discusses with the girls the reasons for the methods adopted. Because there are usually but 5 or 6 of the older girls, the instruction is given under almost ideal conditions. Fifteen minutes daily will accomplish more satisfactory results than are usually attained by weekly lessons in crowded city classes. This method of work does not complicate the schedule.

Ten minutes just before noon affords time to discuss the value in the diet of some one food or one group of foods or to emphasize personal cleanliness or health habits or to arrange about the food supplies needed for the lunches. This 10-minute period if wisely used will interest all the children, boys as well as girls, small children as well as the larger ones, in the relation of food to health and will develop social qualities and ability to cooperate for some common good.

The food talks may be related to the geography lessons, the cost questions to arithmetic and bookkeeping work, and the health discussions to the regular work in physiology and hygiene.

In addition to the educational value of instruction in home economics as given through the preparation of a hot lunch, the lunch itself contributes directly to the good health of the school child. The healthy child (all other things being equal) is the quicker student, is more regular in attendance, and makes more satisfactory progress.

The advantages of hot food at noon are many. The child always eats just as much of the cold food as he did previously and receives as much additional nourishment as the total nutritive value of the hot food given him. Since it is almost impossible to overfeed a rural child who walks from 1 to 3 miles in winter weather, besides playing at noon and recesses and doing some chores night and morning, the added nourishment of the school food is greatly to be desired for all children, and especially for those who give evidence of undernourishment. The agreeable flavor of the hot food, its neat service, the social com-

panionship insured where all sit down to eat together, all contribute to the conditions which increase appetite and enhance the palatability of all food eaten.

As reported by one teacher who had conducted a hot lunch in a northwest section of South Dakota: "There are no questions of discipline after the establishment of the hot lunch. We are just one big, contented family."

Cold food may be just as digestible as warm food, but it is not as quickly digested. Digestion does not begin until the contents of the stomach have reached body temperature. If the lunch pail contents are at a temperature of 50° when eaten, digestion will wait until that food has been warmed from 50° to 98.6° by the heat of the stomach. This warming process consists of warm blood flowing into the lining membrane of the stomach, yielding its heat and being replaced by other portions of warm blood until at last enough heat has been surrendered by the blood to bring the food to the requisite temperature. The child whose stomach is full of cold food, and hence is demanding a large amount of blood in order to start and maintain digestion, will have less blood to spare for brain activities, and will, for a considerable period after lunch, be listless, stupid, or sleepy.

Both directly and indirectly the teaching of home economics through the service of a school lunch has educational value. The time taken from regular school work is not more than 10 minutes daily and is justified by the results attained.

THE FOOD SUPPLY.

The types of food to be prepared at school are limited. Usually the foods needed are, to a great extent, produced on the farms from which the rural school children come. Milk, butter, vegetables, fruits, and the occasional soup bone are all farm products. Some sugar, salt, flour, cocoa, and rice must be purchased.

There are at least five ways by which the raw food material may be secured. First, by voluntary donation by any family feeling so disposed. Second, by requisition, i. e., by the teacher designating who shall bring each needed article and the quantity desired. Third, by purchase with money paid in daily by the children. Fourth, by purchase with money raised by entertainment and social affairs. Fifth, by purchase by the school authorities with money from the common treasury.

By the first method of securing supplies the teacher is largely relieved of responsibility for the materials being at hand, but there are risks assumed which should not be overlooked. Certain children will volunteer to bring more food than their families can well afford or than the parents feel inclined to supply, owing to the parents not fully understanding the lunch conditions. There will always be a chance for neighborhood misunderstanding when this scheme is put in practice.

The second method, when well managed by the teacher, is by all means the best. The teacher directly, or through a committee of pupils, decides on Friday the menus for the next week and the needed amounts of materials for each day's lunch. These menus are written on the board and copied by each child, that the mothers may know what articles will supplement the cold lunch.

The quantities to be brought daily are then posted and also assigned to the different families. The cost of the hot foods is also worked out, so that the child who is too small or walks too far to carry materials may pay in money, and the child who brings material from home may be cognizant alike that he is paid for the food brought and of what he pays for the food eaten. The valuation

placed upon the home-produced foods should be that of their market price. There will be occasions when a majority of the children pay for their lunches and when one or two will be paid in money for the excess of food supplied.

One pupil should act as bookkeeper for an assigned period and should send a weekly statement to each family. This gives invaluable experience in bookkeeping as well as in arithmetic.

The third method is by all means the easiest method and results in a surety as to the food supply, but too often results in an exclusion from the lunch of some needy child or group of children who can not afford to pay in money, but who could have easily paid in some farm product.

Before adopting this method the teacher should assure herself that it will work no hardship for any child and should furthermore make sure that, in eliminating the cooperation required under the second-named plan, she is not losing a valuable opportunity of arousing community interest in the children's welfare and in school activities.

In the fourth method much of that which results from the second is secured, and it is an especially good way to secure supplies if all the children are too small to carry the extra foods and if they must walk too far to have extra burdens.

The fifth way of securing food supplies is encouraged in some States and has been decided to be illegal in others. As home economics is required to be taught in the rural schools in certain States, the products of the class work may be used in the lunch and the cost charged to home economics instruction, as any other instructional material is charged to the general school expenses. This is not considered advisable. The business conduct of the lunch becomes part of its educational value, and this, together with the training in cooperation and in carrying responsibilities, is lost when the school authorities supply the food. Moreover, free food does not accord with American ideals and proves an offense to many school patrons.

Home economics can not be properly taught in a school wherein there is an inadequate water supply.

The very first lesson in food preparation includes a discussion of water as a food, as a cleansing agent, and as an essential in all personal hygiene. Hence, any plans for teaching home economics instruction must be abandoned in schools where children are expected to bring their day's supply of drinking water along with their cold lunches.

One quart of drinking water per day for each child is essential to good health, one quart more for each child is necessary for properly cleansing face and hands before eating, and an additional quart per individual is required for the food preparation lessons and for dish washing.

A rural school of 20 pupils should have not less than 15 gallons a day of pure water if home economics is taught or 10 gallons if cooking is not done.

That thirsty dirty children in a hot, dirty, dry schoolroom should be taught theories of hygiene is little else than a travesty.

Home economics teaching is primarily to encourage right health habits and home helpfulness, and is impossible unless there is an abundance of good water easily obtainable.

With good water, a small amount of equipment, a willing and courageous teacher, and a sympathetic school clientele, home economics teaching is possible, and excellent results are obtainable in rural schools.

EQUIPMENT FOR TEACHING HOME ECONOMICS IN RURAL SCHOOLS.

The efficiency of the teaching of home economics is not wholly dependent on the quality or quantity of equipment supplied. For a small rural school, quite satisfactory teaching can be done with little more kitchen equipment than that which would adequately supply the needs of one rural home, and many lessons can be given with far fewer utensils and much more meager equipment than a good housewife would wish in her own home.

Some type of stove is necessary. The ordinary flat-top heating stove found in many schoolhouses permits of certain lessons in stewing, boiling, and steaming.

Into the stove pipes of such heaters, ingenious teachers have had inserted small ovens and have succeeded in giving lessons in baking and roasting.

This makeshift cookstove can not be recommended. It entails an extravagant use of fuel at all times, except in the coldest weather, and precludes cooking in weather too warm to have the heater used.

The most satisfactory stove is a wood or coal range, located in a side room or in a near-by teacherage. The next most desirable stove is an oil-burning range, with 4 burners and an oven. Good work can be done on a 2-burner oil stove, supplied with a portable oven.

It is recommended that a worktable be provided. A design which has proved satisfactory consists of a strong packing box from 30 to 32 inches in depth, length, and width. Opposite sides or ends are hinged, that may be raised and supported as are table leaves. A shelf is placed across the center of the box. Utensils and dishes when not in use are placed on the shelf and bottom of the box, the sides closed down and fastened, and all are secure from dust or mice. When the leaves are raised and the top covered with white oilcloth, this becomes an excellent worktable, which in a small school may serve as a dining table.

A solid support must be supplied for the oil stove if one without a stand is purchased.

If there are school desks which are not in use, these may be converted into a cooking table by the addition of a removable top which will extend across the tops of two desks when in place.

A temporary table may be set up by using supports with boards placed upon them, and these in turn covered with oilcloth.

Wooden-topped kitchen tables are perfectly satisfactory. It is desirable that there should be one of these tables for each two girls who are to work. If a commercial kitchen cabinet can be afforded, and a real range and a sink with running water and waste drain secured, then the conditions for good workmanship are assured.

Where there is a will there is a way. One teacher writes:

> I selected for the kitchen the boys' cloak room, which has a window and doors opening into the outer hall and schoolroom. The children and I enameled every shelf and bit of woodwork with white. I obtained a blue-flame kerosene oil stove, for which we have an oven. The school board bought 36 bowls, cups, and small plates, and other articles.

The following experience comes from a part of the country where there are forests and where boys are accustomed to building with materials at hand:

> During recess and noon the boys built a rude house. The only materials they had to use were fence rails and shakes, but soon a wonderful little building was put up, large enough to contain homemade benches and a good sized table. When all was completed a kind neighbor donated some dishes and an old stove, which gave the finishing touches to our queer little kitchen.

The teacherage, that convenience which is so common in the Pacific Northwest, has been found to serve not only as a kitchen but also as a dining room for the rural school children.

I have only eight children in my school, and all are served. We have cocoa twice a week, soup twice a week, and a baked dinner once a week.

The sixth-grade grammar class were assigned the topic, how to build a fire in a coal range. We have all learned by experience how to do the work. Half an hour before noon one girl is sent to the teacherage to build the fire and put on the double boiler. If it is the day we have baked apples, potatoes, or beans, we go over at recess and get everything ready and start the fire. If it is the day I am to serve my "turn," one of the boys builds a fire for me. The boys take turns in getting wood, coal, water, etc.

Essential Articles of Equipment.[1]

The following gives a list of essential articles for equipment for home economics teaching and the service of hot food to rural school children:

Work space, about 2 by 2½ feet for each girl who will assist in the cooking.[2]
1 stove (wood, coal, or oil).
1 oven, if not included with stove.
1 cupboard or cabinet for the storage of utensils and food supplies.[3]
1 double boiler, 2-quart (may be omitted if it can not be afforded).
1 double boiler, 4-quart.[4]
1 Berlin kettle, 6-quart.[4]
1 teakettle, 10-quart (large lard bucket may be substituted).
2 tin dish pans, 10-quart.
1 water pail, unless running water is supplied.
1 pudding pan, 4-quart.
1 earthen mixing bowl, 4-quart (milk crock may be substituted).
1 earthen bowl, 2-quart.
1 earthen bowl, 1-quart.
2 covered milk cans, 2-quart (lard pails may be substituted).
1 large steel frying pan.
2 heavily tinned wire toasters.
1 heavy tin colander.
2 gem tins, 12-cup.
1 bean pot (milk crock with lid may be substituted).
1 flour seive, 1-quart.
1 soup ladle.
2 paring knives.
2 cooking forks (one large).
2 tablespoons.
2 teaspoons.
1 long-handled large spoon.
1 wooden spoon.
1 Dover egg beater.
1 can opener.
1 bread or butcher knife.
1 wooden potato masher.
1 bread board.
1 rolling pin.
1 Russia iron roasting pan.
4 tin baking pans, 9 by 9 by 1½ inch, or 4 pie tins or layer cake tins.
1 measuring cup, ½-pint.
1 measuring cup, 1-quart.
1 scrub brush.
6 dish towels (may be hemmed flour sacks).
2 dish cloths (may be knitted of wrapping cord).
1 cup, spoon, and plate for each child in school.
Mason jars, lard pails, coffee and baking-powder cans to hold foods and protect from dust, mice, and insects.
Paper towels are highly desirable.
Wash basins, 6 small tin ones, if possible.
1 kerosene oil can, 5-gallon, will be needed if oil is used as fuel.

Securing equipment.—The articles may be secured by purchase by the school board, by donation from the patrons, or by purchase by the school from money raised by some school affair. Usually a combination of all of these methods is best, because by the united efforts of all the school there is awakened a general interest in the project.

If the school board will arrange a suitable place and purchase or have made the larger equipment, and if the older boys are interested in aiding in the making of such things as tables, cupboards, etc., then the school and school

[1] The size of the utensils should be suited to the number of pupils to be served; about 1 quart for each 5 pupils.
[2] This may take the form of improvised tables or be supplied as regular tables.
[3] This may be made by members of the school or be purchased.
[4] Large enough for a school of 20 children.

patrons can be depended upon to secure the smaller articles. Pie socials, box lunches, and school entertainments of various kinds may be the means of securing the money for equipment and also the staple groceries needed at first.

Unless the community is interested and sympathetic with the teachers' efforts to introduce home-economics teaching and the service of hot food, and unless the teacher herself is willing to assume some additional responsibility and work and has some knowledge of foods and food preparation and of sanitation and personal hygiene, the plan can not succeed. With the interest of the more intelligent parents and the enthusiasm of the capable teacher, home-economics instruction may be maintained with slight cost to the taxpayers and with great benefit to the health and educational progress of the school children.

A COURSE OF STUDY IN HOME ECONOMICS FOR SMALL RURAL SCHOOLS.

It is assumed in the following course of study that the school is small, and that not more than two teachers are employed. It is further assumed that the products prepared are used as supplemental hot foods for the pupils who bring cold lunches from home.

The lessons are intended to interest all of the children and to take not more than about 10 minutes daily for food instruction and 15 minutes for food preparation. There are textbooks which cover the subject quite fully. Some of these books should be included in the school library. There are many valuable bulletins issued by the United States Department of Agriculture which can be secured without expense. These bulletins, when fastened together, make excellent textbooks and recipe books for use either at home or in school.

Any course of study to be of value must be modified to fit local conditions. Foods seasonal in one place may be unavailable in other sections. Racial or religious opinions must be borne in mind when planning class work. The ages of the children who partake of the food also make modifications desirable.

Home economics is an inclusive term; so not all phases of the subject can be represented in this first course of study, which is designed for use where time is limited; special training of the teacher, meager; and the equipment, scant. As the pupils advance in knowledge and skill, other home economics courses may be introduced.

PRELIMINARY PREPARATION FOR HOME ECONOMICS TEACHING.

The teacher, new in the community, may need several weeks to learn the best method of approach to the problem of establishing and maintaining daily lessons in cookery and daily service of hot foods.

For some days, or even weeks, the morning recess and the extra time at noon may be profitably spent in making ready for the actual food work which will be given later. During this period, emphasis may be placed upon methods of work, neatness, dexterity, orderliness, and personal cleanliness.

Fire-making and the management of the range, the temperature of boiling water, and the effect of heat upon the hardness of water may be included in this preliminary instruction.

All of the children may be introduced to the use of the various cleaning agents, such as hot water, soap, scouring soaps, scouring powders, water softening agents, wood ashes, soft red brick, and clean sand.

By thus arranging that all of the children shall participate in the cleaning of the utensils and other equipment and by the arranging of the cooking space, a spirit of cooperation and community activity will be developed. Not infrequently some painting and some carpentry will be necessary. This will interest all of the boys.

During this time may be established the custom of washing hands and face before opening the dinner pail and also of all children sitting down to eat at the same time and of each having a clean piece of paper on which to spread the lunch and a clean cloth of some kind, or a paper napkin. The teacher may decide that a thousand paper napkins would be a good investment, even if purchased out of her own income.

ORDER OF LESSONS IN THE THEORY OF FOODS, PERSONAL HYGIENE, AND SANITATION.[5]

1. By questions and answers evolve a definition of health, of disease, of conditions essential to health. Among the latter will be one, good food.

2. Develop a definition for food and name the sources of food, i. e., vegetables, fruits, cereals, animal tissues, and animal products, minerals (table salt), and water.

3. Discuss the need of water, the amount that should be used, and the difference between pure water and impure water. After this lesson, establish the habit of having water, milk, cocoa, or soup with every meal.

4. Discuss why some foods are cooked, i. e., to make more agreeable in appearance and flavor, to make more digestible, and sometimes to destroy disease-producing conditions.

5. Develop a list of ways in which foods may be cooked.

6. Have a story about the ways Indians cooked their foods and another about how cooking was done over fireplaces and in Dutch ovens in the homes of the early settlers in America.

7. Have a lesson about camp-fire cookery. (Excellent material can be secured from the Boy Scout organization.)

8. Evolve a list of different cleansing agents, being certain to include hot water.

9. Why everything connected with food preparation should be clean—hands, utensils, the food itself, the dishes on which it is served.

10. Ways foods become contaminated.

11. Why wash hands before eating.

Insist that every child wash face and hands before eating.

12. Review Lesson 2 and begin a talk about milk; how perfectly it meets the needs of all growing animals.

13. Another lesson on milk. How much each child needs each day. There are excellent pictures which may be secured that show what a difference drinking milk makes in a child's looks.

14. Discuss "clean milk," i. e., milk from healthy, clean cows; milked in a clean barn or outdoors; milked by a person with clean hands into a pail that has been well washed and *boiled;* and, at last, strained through a clean cloth into clean utensils and stored in a clean place.

15. Discuss cause of milk souring and the necessity of properly caring for milk.

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[5] It must be borne in mind that country boys and girls are familiar with many facts concerning the feeding and care of animals and that this knowledge can be carried over and applied to the foods needed by man.

16. If possible have a number of children weighed and measured, and start charts and records of the growth. Articulate this work with the home economics teaching and the school lunch service.

17. Discuss the value of cottage cheese and other cheese.

18. Develop from the children's knowledge the value of skim milk for calves, chickens, and pigs.

19. Discuss the value of skim milk as a food for growing children, and make a list of foods in which skim milk can be used.

20. Have the children name all the vegetables they know of. Divide list according to parts used—leaf, root, tubers, stem, pod, seed, and flower.

21. Develop reasons for using vegetables.

22–30. Consider the value in the diet of different vegetables of local production.

30–35. Discuss fruits in same way.

In all lessons make personal application of facts in regard to good food habits, personal cleanliness, good table manners, courtesy, and kindness.

35–40. Kinds, sources, modes of preparation, and use of cereal products.

The children will enjoy telling what they know of how different foods are grown.

From time to time connect the common knowledge among rural children in regard to animal feeding with facts concerning proper human food.

40–45. From knowledge about farm animals develop the fact that human beings require different kinds and amounts of food, according to age, size, kind of work, and climate.

These lessons will emphasize the uses of food for heat, work power, building and repair, and the regulation of growth.

45–50. Review all that has been discussed in previous lessons and weave the bits of information into one whole. Relate this to the everyday diet of the school child.

Gradually the older children may think of the various foods under a new grouping, i. e., sugars and starches, fats, proteins, minerals, and an unknown group called vitamines. It is not wise to introduce these different groups too rapidly. Sugar is easily understood, but starch is not so quickly recognized.

Grating a clean raw Irish potato gives an opportunity for the children to realize that there are water, starch, and a bulky rough substance in potatoes. This latter can be discussed as the skeleton of the vegetable material that makes it hold its shape, i. e., to stand up. The starch may be washed out, settled, and dried. The value of the coarse material or cellulose in the diet should be stressed. The protein group and its value in the diet can be easily made plain if the teacher will draw the attention of the children to the farmers' use of bran, clover, alfalfa, vetch, cowpeas, soybeans, and oilcake as an essential part of the animal's ration, and then relate this knowledge to the similar needs of humans which are met by the use of milk, cheese, eggs, beans and peas, nuts, lean meats, and fish.

The one protein food, the use of which must be repeatedly emphasized, is milk. The emphasis on the use of others of the group will depend on the economic conditions in the neighborhood and upon climatic conditions.

If throughout the period of lunch preparation, good sanitary, efficient methods of work are insisted upon, by the end of the year the children will have progressed well along in a knowledge in regard to right food habits, and some will know the fundamental processes of food preparation.

Reference books:

Conn—Yeast, Molds, and Bacteria.

Kinne and Cooley—The Home and the Family. Macmillan.

Cooley and Spohr—Household Arts for Home and School. Vol. II. Macmillan.

Greer—Textbook of Cooking. Allyn and Bacon. Milk, Butter and Cheese, Eggs and Vegetables. International Educational Publishing Co., Scranton, Pa.

Balderston—Housewifery. Lippincott.

Bulletins, charts, etc.:

For list of Government bulletins, see Bureau of Education, Home Economics Circular No. 5.

By addressing the Dairy Division of the Department of Agriculture, excellent charts on milk as an article of diet can be secured.

Food charts can be obtained from the Office of Home Economics, States Relations Service, Department of Agriculture.

School Hygiene Division of the Bureau of Education, Washington, D. C., supplies weight and measure charts.

Many commercial concerns supply educational exhibits free.

Securing training for teaching food preparation and for the management of hot lunch service.—Any summer school can, in the 10 weeks' session, give sufficient instruction in simple food preparation to enable the teachers to direct the pupils in the necessary processes of making cocoa, soups with a milk foundation, vegetable soups, cereal cookery, and other simple food preparations; moreover, many summer schools instruct prospective rural-school teachers in the fundamental facts concerning nutrition and diet, and hygiene and sanitation. It is quite as necessary that the rural teachers be able to advise in the care of the growing human body as to train the growing mind.

PRACTICAL WORK IN RURAL-SCHOOL HOME ECONOMICS.

Part I. Good housekeeping practices:

Dish washing and scalding.
Cleaning iron, steel, aluminum, tin, and wooden ware.
Scrubbing the kitchen table.
Management of an oil stove or wood range.
Cleaning a stove.
Convenient and sanitary arrangement of cooking utensils.
Washing and boiling dishcloths and towels.
Care of raw food.
Storage of cereals, etc.
Care of cooked foods.
Especial care of milk containers.

Part II. The service.

Part III. Food preparation:

1. Table of equivalents and abbreviations—

t. stands for teaspoonful.
T., for tablespoonful.
c., for ½ pint cup.
qt., for 1 quart.
3 t.=1 T.
16 T.=1 c.
4 c.=1 qt.
2 c. butter or lard=1 pound.
2 c. granulated sugar=1 pound.
4 c. flour=1 pound.

All measures must be filled just level full.

To measure sugar, flour, or other dry material, dip spoon into material and with edge of knife scrape off all that is above the level edge of the spoon; to measure a cup full of dry material, fill the cup with a tablespoon, i. e., do not dip the cup down into the container.

2. Order of work—

Hands of worker must be washed.[5a]
Nails cleaned.
Apron put on.

All material to be used in preparing the dish must be gathered together before the cooking operation is started.

Read the recipe carefully.

3. Suggested order of lessons—

Lemonade or other fruit juice.
Apple sauce.
Baked apples.
Lesson in canning tomatoes.
Lesson in canning peaches.
Tomato cream soup.
Creamed potatoes.
Cocoa.
Vegetable soup.
Escalloped tomatoes.
Corn soup.
Chocolate.
Cream of barley soup.
Steamed rice and raisins served.
Macaroni and tomato sauce.
Baked potatoes and creamed dried beef.
Cream of oyster-plant soup, or cream of celery soup or onion soup.
Cream soup of canned peas.
Creamed cabbage.
Spinach soup.
Graham muffins.
Creamed turnips.
Steamed or baked squash.
Potato soup.
Corn meal muffins.
Scalloped tomatoes and corn.
Hot biscuit and creamed codfish.
Whole wheat muffins.
Baked beans.
Cream of bean soup.
Tomato soup with soup bone.
Vegetable soup with soup bone.
Baked sweet potatoes with cream gravy.
Creamed carrots or turnips.
Hot gingerbread—milk.
Stewed rabbit.
Meat pie.
Onion soup.
Poached eggs on cream toast.
Escalloped eggs.

Quantities.—The food cooked in the home economics lessons must be served to the school children; hence, the quantity prepared is dependent upon the number of children to be served.

In general, 1 gallon of cocoa or soup will give 20 servings.

[5a] Be careful that hair is not touched with hands after they are washed, and also see that hands are washed immediately if handkerchief is used.

An intelligent teacher soon learns to estimate the size of service that the children will desire.

When many vegetables or fruits are to be pared or cut up, it may be made a recess problem for the entire school.

RECIPES FOR HOT FOODS TO BE SERVED AT SCHOOL.

Cocoa No. 1, for 20 children—

One gallon of milk heated in double boiler.
Two-thirds cup[6] cocoa.
One cup sugar.
Two cups hot water.

Place sugar, cocoa, and water in saucepan and cook slowly until thick and glossy; then add to the scalding hot milk and beat or stir thoroughly.

Cocoa No. 2.—Take 1 pound cocoa, measure, add an equal quantity of sugar and 3 cups of water, cook until thick and glossy, and then pour into jelly glasses or glass jars. Cover and set away. When cocoa is wanted for lunch use the following recipe:

One cup of milk for each child.
One and one-half level tablespoonfuls of the cocoa and sugar mixture.

Heat the milk scalding hot in the double boiler, and add the cocoa, beat well, and serve. If found that the children wish the cocoa sweeter add more sugar while making, else the children will waste the sugar by adding too much.

Milk and Vegetable Soup, for 20 children.—

Two quarts milk heated in double boiler,
One-half cup flour,
One-half cup butter,
Three level teaspoonfuls salt.
Two quarts of vegetables with water in which cooked, or two quarts of canned tomatoes.

When the milk is scalding hot, rub the flour, butter, and salt together until it forms a smooth paste; gather this upon the spoon, and stir into the hot milk, and continue stirring until the milk becomes about as thick as cream. Cook 20 minutes. Pass the vegetable and water in which cooked through a colander, rubbing with wooden potato masher until all the vegetable is forced through, then add to the hot and thickened milk, and serve. A little extra salt may be necessary.

Canned tomatoes, canned corn or fresh or dried onions, celery, spinach, carrots, potatoes, beans, or other vegetables may be used.

If *potatoes* are used 1 quart of raw potatoes will be enough. After these are cooked, 1 quart of the potato water should be left with them, and both potatoes and potato water passed through the colander, and poured into the hot and thickened milk. *Beans* also are so thickening that 1 quart of cooked beans will be sufficient for the above quantity of soup with either an extra quart of milk or a quart of hot water added.

If *canned corn* is used, 1 quart of it can be added directly to the hot thickened milk, and then 1 quart of extra milk added, and all allowed to become scalding hot.

Onion soup is good and wholesome; and, unless some one child dislikes onion, a few slices are an excellent addition to almost all vegetable soups.

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[6] All measures should be level full, never rounded or heaped; 3 teaspoonfuls=1 tablespoonful; 16 tablespoonfuls=1 cup; 2 cups=1 pint.

Vegetable Soup with Meat Stock, for 20 pupils.—

Four pounds of soup bone with a little meat attached,
One quart of pared and diced potatoes,
One pint of pared and diced carrots,
One cup turnips,
One pint of onions sliced,
One quart of canned tomatoes,
One bunch of celery or dried celery leaves,
One and one-half tablespoonfuls salt.

Place meat in 6-quart kettle and cover with water, add salt, and cook slowly the entire morning.

At recess have the vegetables pared and diced and added to the soup. Keep 4 quarts of water in the kettle all morning, so that when the bones are removed and the meat cut up there will be a gallon of nourishing soup and vegetables. Skim the soup, if there is much fat on the surface, and save this fat to use in place of butter in the milk soups.

Lima Bean Soup—

One and one-half pints dried lima beans soaked over night.
One-fourth cup parsley, if convenient.
One onion.
One stalk of celery, if convenient, or some dried celery leaves.
One carrot.
One-third cup flour.
One-half cup butter.
Two quarts of milk.
Salt to taste.
Pepper or paprika, if liked.

Cook beans, onion, celery, carrot, and parsley all morning. At 11.30 rub through colander. Cook milk, flour, and butter as directed for milk soups. Add the hot vegetables and water thickened milk. Stir well. Season extra if necessary.

Oyster Stew, for 20 pupils—

Three quarts of milk.
Two quarts oysters.
One-half cup butter.
One tablespoon salt.
Pepper to taste.

Heat the milk in double boiler; add butter, salt, and pepper. When scalding hot add the oysters, which have been placed in colander and washed in cold water and carefully picked over. Cook the oysters only long enough for the gills to curl slightly.[7]

Boiled Rice, for 20 pupils—

One quart rice.
Two quarts water.
Two quarts milk.
One tablespoon level full of salt.

Place milk, water, and salt in upper part of double boiler. Place directly over the heat, and when actually boiling slowly add to it the washed rice. Cook

[7] This recipe is inserted here because there are rural communities where oysters are easily obtained.

over heat 2 or 3 minutes, then put upper into lower part of double boiler and continue to cook 1 hour.

Washing rice is necessary, since it is carelessly handled and shipped and therefore dirty when received from the grocery, and also because there is much loose starch on the grains which causes them to stick together while cooking.

Rice with raisins.—To the previous recipe add 1 pound of washed seeded raisins at the same time the rice is added. Serve with sugar and milk.

Stewed Rabbits.—Skin, clean, and cut up rabbits and let stand in cold salted water overnight or hang to freeze overnight. Before school time, wash and cut up rabbits.

Take 3 tablespoonfuls of lard or other fat and one-half onion for each rabbit. Fry the onion in the fat. Roll the rabbit pieces in flour and then fry a light brown in the fat. Cover with water and cook gently all morning. Extra water may be needed occasionally. At 11 o'clock, add 1 pared potato for each child. At 11.45 take up meat and potatoes and make gravy by adding flour which has been mixed with cold water until a smooth paste. One tablespoonful will be needed to thicken 1 cup of gravy.

Meat Pie.—Take for each child one-half cup of cold cooked meat (beef, rabbit, squirrel, or chicken), and cut up into small pieces. Place in baking dish and cover with boiling hot gravy. Make a crust of dough made according to the following recipe. It is necessary that the meat and gravy be boiling hot, in order that the dough may cook on the under side as rapidly as on top, and thus be well done.

Baking Powder Biscuit Crust, for 20 pupils.—

One quart flour.
One-third cup shortening.
Two teaspoons level full of salt.
Three and one-half level tablespoonfuls baking powder.
About 1¾ cup milk or water.

Sift the dry ingredients together. Work the shortening in and add the liquid to make a soft dough. Roll out about one-half inch thick and place on top of meat in baking dish. Bake about 30 minutes.

Cream Toast, for 20 pupils—

Three quarts of milk.
Three-fourths cup flour.
Three-fourths cup butter.
Four level teaspoonfuls salt.
Two slices of toast for each child.

Heat the milk scalding hot in double boiler. Rub butter, flour, and salt to smooth paste. Stir into the hot milk. Continue stirring until as thick as cream. This is known as a thin white sauce. Cook 20 minutes. Pour over toast and serve.

Creamed Vegetables, for 20 pupils—

Two quarts of milk.
Three-fourths cup flour.
Three-fourths cup butter.
Four teaspoonfuls salt.
Two quarts cooked vegetables.

Combine first four ingredients according to previous recipe into a white sauce. Cut vegetables into approximately half-inch cubes and cook in boiling

salted water. When done draw water off and pour sauce over, or add vegetables to the white sauce and heat until all are thoroughly hot. Pepper may be added if desired, but the use of pepper in children's food is not recommended.

Creamed Dried Beef, for 20 pupils—

Make a white sauce from—
Two quarts of milk.
Three-fourths cup flour.
Three-fourths cup butter.

Add one-half pound of dried beef torn into small pieces. Cook 15 minutes. Salt will not be needed owing to the saltiness of the dried beef.

This recipe is excellent to serve with baked potatoes.

Frizzled Beef—

One-half pound beef.
One-half cup flour.
One-half cup butter.
Two quarts milk.

Melt the butter in a frying pan. Add the chipped dried beef to this. Cook until the meat frizzles up, then add the flour and stir until well mixed. Add the cold milk and cook until smooth and creamy.

SECURING SUPPLIES FOR THE FOOD WORK.

There are various methods of securing the necessary raw foods, as has been discussed in previous circulars.

For each week some older boy or girl should be chosen bookkeeper, and another one be appointed head of the work. The "head" should decide, with the advice of the teacher, just what food preparation work would be done the following week and should make a list of all materials needed and the quantity of each.

The bookkeeper should enter these supplies when received and credit the local price of these to the family from which they are secured.

The bookkeeper and "head" should figure cost of each portion, and these should be charged to the families the children of which have been present.

By watchful care on the part of the teacher, no hardships upon any family need result. If there is real and genuine destitution, some welfare organization should be interested in the cases. If there is general poverty, then it may be best for the cost of the food to be paid out of school funds.

There are opportunities in food preparation to provide problems in arithmetic and bookkeeping and to stimulate increased interest in physiology, hygiene, geography, and nature study. Some of the reports can be made a part of the language lessons.

There is no question but what a better community spirit and a greater interest in school affairs may be developed through the cooperation essential to a satisfactory maintenance of home economics in the rural school.

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